

EXHIBIT 4

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KSTATE

Laundering Guide

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Most of us, at some point, are faced with the task of doing laundry, and we want to know the easiest and best way of doing it. Good laundry procedures can increase the wear life of clothing.

Laundering clothes is not the same as it was 20 years ago. Today's automatic washers and dryers offer a variety of features. Methods have changed; more people are washing with warm or cold water to save energy, and this can affect results.

Fabrics have changed, too. Synthetic fibers, blended fabrics, and permanent press, dyes, fluorescent whiteners, and other finishes call for different procedures. And, most of all, laundry detergents and other laundry products have changed. This publication should help you get the best results with today's equipment and products.

Preparing and Pretreating Clothes

Preparing clothes for laundering is a step many of us are tempted to omit, but it's well worth the time it takes. Mending rips and tears before washing prevents further damage during laundering. Pretreating spots and stains has become a necessity because of the changes in detergents and increased use of synthetic fabrics that do not release soil easily.

To prepare clothes for laundering:

- Close zippers and hooks and eyes. This prevents damage to fasteners and keeps them from snagging other clothes.

- Shake out loose dirt. Brush dirt or lint out of pockets and cuffs.
- Mend rips and tears.
- Turn permanent press garments inside out. This helps prevent pilling and catching lint.
- Place small items and hosiery in mesh bag.
- Remove nonwashable parts, such as trim or belts.
- Empty all pockets.

To pretreat before laundering:

- Always remove spots and stains. Use a prewash spray for some spots, or refer to a stain removal chart for more difficult ones. Rub heavily soiled areas, especially collars and cuffs, with a liquid detergent or paste of powdered detergent and water.
- Presoak heavily soiled items. Use a laundry detergent for short soaks or a presoak product for 30 minutes to overnight soaking. Drain the soak water and wash with usual amount of fresh detergent.

Sorting Clothes

Sorting clothes can help avoid some laundry problems. Group together items that can be washed in the same water temperature and agitation and spin speed. Sort by:

- Color—separate light colors from bright or dark colors, and whites (especially white nylon) from all colors. Nylon is a "color scavenger" that readily picks up colors from other clothes. Many dark or bright colors need cooler water temperatures to prevent fading.

- Fabric, construction, texture—read care instructions.

Some fabrics need hot water; others need warm or cool. Delicate fabrics, such as loose knits or lingerie, need gentle agitation; sturdy fabrics need regular wash cycles. Permanent press and many synthetics need special machine cycles to prevent wrinkling.

Separate "lint-givers" such as terry cloth and chenille from "lint-takers" such as permanent press, synthetics, corduroy or velveteen.

- Degree of soil—wash lightly soiled clothes separately from heavily soiled work or play clothes.

Better laundry results can be achieved without wasting water by using a washing machine with variable water level settings so you can wash two or three small loads of properly sorted clothes rather than one large mixed load.

Load Size

Weight of clothes is not an accurate indication of load size. Judge the size of wash loads by bulk (amount of space the items occupy) rather than

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Phosphate vs. Nonphosphate

It was mentioned earlier that phosphates are considered the best-performing builder in detergents. However, some years ago phosphates came under fire because it was believed they accelerate algae growth in lakes and rivers. Although many experts disagreed with the conclusion that eliminating phosphates detergents would solve the problem, some states (not Kansas) banned the use of phosphate detergents, and nearly all manufacturers have reduced the level of phosphates in their products. Although these reduced-phosphate detergents still perform well, it has become extremely important to use the correct amount of detergent and to increase the amount used for heavily soiled clothes, hard water or large loads. In general, powdered nonphosphate detergents do not clean as well as phosphate ones.

Carbonates are the most commonly used phosphate substitute in granular detergents. Unfortunately, they soften water by reacting with the hardness minerals to form small, insoluble particles called precipitate, which can build up on fabrics and washing machine parts. Clothes can become gray, stiff, and lose or change color. The buildup is difficult to remove and can damage machine parts and cause the finish of some flame-retardant fabrics to become ineffective. Although some nonphosphate granular detergents today are improved over those of a few years ago, the phosphate granular ones are still a better choice. Check labels for type of builder used.

Liquid detergents have the advantage of dissolving quickly, especially in cold water. They are also easier to use for pre-spotting soil and stains. Liquid nonphosphates do not cause precipitate buildup. They are made with more surfactant and no builder and do a good job of cleaning. They do not react to water hardness and leave no precipitate or deposit on fabric.

Water Conditioners or Softeners

Water conditioners, precipitating or nonprecipitating, inactivate water hardness minerals that reduce the efficiency of the detergent. If you have very hard water or find your clothes are looking gray, you may want to add a nonprecipitating water conditioner to your wash and rinse water. A nonprecipitating water conditioner inactivates hardness minerals, holds them in suspension and provides alkalinity for effective cleaning. Examples are Calgon, Spring Rain and Blue Raindrops. These products should be added to the wash water before the detergent. Precipitating water softeners such as washing soda or sodium carbonate should not be used in an automatic washer. When added to hard water they form insoluble particles (precipitate) that can cling to fabrics and washer parts and leave a residue that is hard to remove. The water becomes cloudy because of the precipitate. (Water with nonprecipitating conditioners remains clear.)

Detergent Boosters

Detergent "boosters" such as Axion or Miracle White were developed to increase the cleaning power of detergents. Since many contain water conditioners, there usually is no necessity for using both laundry aids. Formulas for "boosters" can contain any one or a combination of:

- water conditioners to soften water;
- borax to help control alkalinity and loosen soil;
- enzymes to dissolve protein stains;
- fluorescent whiteners;
- small amounts of surfactants or builders;
- corrosion inhibitors.

Enzyme Presoaks

Enzyme presoak products such as Axion, Biz, and Trizyme are effective in removing protein-based stains such

as egg, blood or grass. They are not effective in removing oil-based stains. Enzyme products require time to work. For best results, soak in warm water for at least 1/2 hour; effectiveness is reduced in cold water or at temperatures above 140° F (60° C). The products can be safely used on all fibers (except silk and wool), with all detergents and with oxygen bleaches. Chlorine bleach destroys the enzyme action and should not be used with enzyme products, unless the bleach is added after the enzyme action is completed. In addition to enzymes, these granular products contain combinations of builders, surfactants, fluorescent brighteners, bluing agents, fragrances and possibly an oxygen bleach.

Diaper Presoak Products

Borax is usually the basic ingredient in diaper presoak products. It is used by itself or with detergents and perfumes. Borax inhibits bacteria growth and ammonia odors while diapers are awaiting laundering.

Fabric Softeners

Fabric softener leaves a residue on the fabric that makes it softer and fluffier, reduces static cling, imparts pleasing fragrances, reduces drying time and wrinkling, and makes ironing easier. Reduction of static cling also helps prevent lint from sticking to garments. There are two types available:

- Rinse-added fabric softeners (Downy, Snuggie, Final Touch)—These should only be used in the rinse cycle and should not be used with soap, detergent, bleach, bluing, or packaged water conditioners. They will react and cause a white, sticky residue on clothes which is sometimes mistaken for lint. They are available in concentrated form requiring 1 to 3 ounces (30 to 90 ml) per wash and in diluted form requiring 1/4 to 1/2 cup (60 to 120 ml) per wash depending on load size.

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If your washer is equipped with a fabric softener dispenser, follow the directions in the instruction book, and the softener will be added automatically to the final rinse. If the washer does not have a dispenser, add the recommended amount of fabric softener to the rinse water as soon as agitation begins in the final rinse. Do not pour directly on clothes.

• **Dryer-added fabric softeners** (Downy, Bounce, Cling-Free, Snuggie, Free n' Soft)—Available as coated, nonwoven fabric or foam sheets to be put in the dryer with the clothes or as a pad to be fastened to the drum for multiple loads. Read and follow package directions. The sheet form often can be used for two or three loads. The solid is semi-permanently attached to the dryer, and is slowly absorbed by fabric surfaces as clothes come into contact with pad. One pad should last for 40–50 dryer loads.

Modern technology has made possible the combination of detergent and fabric softener in one product. Two such granular products are Bold 3 and Fab, and in liquid form Yes and Solo.

Fabric Softener Buildup, Stains

Both wash- and rinse-added softeners are absorbed by fabrics, so the amount used must be adjusted to the size of the load, not to the amount of water in the tub. Dryer-added sheets should also be adjusted to the size of the load. Only half a sheet should be used with small loads.

Too much fabric softener will cause the clothes to appear yellow or dingy and feel greasy. It also makes the fabric less absorbent, which can diminish the effectiveness of towels and diapers and make clothing hot to wear. If this happens, omit softener every third or fourth laundering.

Too little detergent in the wash will prevent complete removal of the fabric softener, allowing a gradual buildup.

Avoid pouring rinse-added or wash-added fabric softener directly on the clothes. It will cause an oily, greasy-looking stain, but will not damage fabric. On rare occasions, dryer-added fabric softeners can cause small translucent spots or streaking on colored synthetics or blends, but it is not permanent. Fabric softener stains can be removed by rubbing the dampened stain with bar soap and rewashing the item.

Prewash Spot and Stain Removers

Prewash spot removers—such as Spray-and-Wash, Shout, Clorox Pre-Wash, Faultless Spray Pre-Wash, and Miracle White Laundry Soil and Stain Remover—help loosen and remove soil during laundering. They are especially helpful on permanent-press garments and synthetics such as polyester that tends to hold oily stains. There are two kinds: a solvent type for oily or greasy stains and a surfactant type that works well on non-oily stains such as food or dirt. Read labels to determine which kind you are buying.

Solvent-based products usually list contents as “petroleum distillates,” “chlorinated hydrocarbons” or “per-chloroethylene.” Grease solvents work very quickly; add treated items should be added to the wash water before the solvent evaporates. These products will work with any detergent in any water temperature, but occasionally in cold water, the prespotter may not completely rinse away and a faint stain will appear. If this happens, treat the stain with liquid detergent (or paste of powdered detergent) and rewash before drying in an automatic dryer where the stain might be set by the heat.

Follow label directions when using these products. Avoid spraying on table tops, washers or dryers because they may damage some plastics or painted surfaces.

Bleaches

Bleaches help whiten fabrics and remove some heavy soils. Chlorine bleach provides a disinfectant action.

Chlorine bleaches, usually liquid, can be safely used on all washable fabrics except silk, wool, spandex, noncolorfast items, certain flame-retardant finishes, and fabrics treated with chlorine retentive finishes, such as permanent press. (Read care labels on clothes and all directions on the bleach container.)

Always follow the manufacturer's instructions for the amount of chlorine bleach to use. Since instructions are usually given as $\frac{1}{2}$ cup for each 2 gallons of wash water, check the washer instructions to see how many gallons are used for each water level setting.

Improper use of chlorine bleach will damage fabrics. The damage may appear as rips, tears, or holes. It often will not appear for several launderings after the bleach has been improperly used. To avoid damage:

- Never allow undiluted chlorine bleach to come in direct contact with fabric.
- Always measure the amount used—don't guess.
- Use a bleach dispenser, if available. Add recommended amount of chlorine bleach to dispenser before loading washer with clothes, to prevent undiluted bleach from accidentally spilling onto fabrics.

If your washer does not have a bleach dispenser, dilute chlorine bleach as recommended (usually 1 cup to 1 gallon of water). After the washing action starts, lift the lid and pour the diluted bleach solution around the agitator. Close lid immediately and re-start washer.

Chlorine bleach can react with iron in hard water and cause yellow or pink stains. Test by adding 1 tablespoon chlorine bleach to 1 cup of hot water. If the water turns red or brown, it contains excessive iron, and you should use only oxygen bleaches.

If you're not sure whether chlorine

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